

THE CAPTURE AND TRANSLOCATION OF THREE SPECIES OF WILD UNGULATES IN THE EASTERN TRANSVAAL WITH SPECIAL REFERENCE TO R05-2807/B-5F (ROCHE) AS A TRANQUILLIZER IN GAME ANIMALS

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The turn of the nineteenth century witnessed a remarkable decrease in the population density of one of the most graceful game species in the Kruger National Park. The numerical strength of oribi (*Ourebia ourebi* Zimmerman) dwindled to such an extent during the nineteen twenties that by 1925 only a small number still survived on the Saliji-flats and the long grass veld of Pretoriuskop area, west of Ship Mountain. The species became extinct during 1943 and for many years oribi remained unrepresented in the mammalian community of this vast wildlife sanctuary.

In accordance with the nature conservation policy of the National Parks Board of Trustees an attempt was made during August, 1962 to re-introduce this species. This could only be accomplished through the generous co-operation and assistance received from individuals and bodies outside the Kruger National Park. During July and August of 1962, 29 animals were captured on a number of farms and Trust lands of the Department of Forestry in the middle and highveld of the Eastern Transvaal. During these operations six steenbuck (*Raphicerus campestris zuluensis* Roberts) and eight grey rhebuck (*Pelea capreolus* Bechstein) were also captured and released in a small Provincial game reserve near Badplaas. All the oribi captured were translocated to the Pretoriuskop area in the Kruger National Park, and released in the Faai white rhinoceros camp — an area of some 300 morgen in extent, which had been specially fitted with jackal-proof netting for this purpose.

TABLE 1.
R05-2807/B-5F (Roche) as a tranquilizer in Captured Oripi (*Ourebia ourebi* Zimmerman)

No.	Sex	Weight in lbs.	Initial dose mgm	Additional mgm. after initial dose	Additional mgm. after initial dose	Total dose mgm/lb.	Reaction commenced (minutes)	Tranquilized after (minutes)	REMARKS
1.	♂	34 Actual	21	5 after 60 min.	12.5 after 120 min.	1.15	140	210	Mild sedation. Animal struggled violently after capture and was carried to truck immediately after injection of initial dose. Released 14 hrs. after capture. Still somewhat ataxic.
2.	♂	33 Actual	40	—	—	1.2	10	20	Kept blindfolded and lightly tied overnight. Tranquil. Released after 22 hours. Ran normally.
3.	♀	31 Actual	35	—	—	1.13	10	20	Marked sedation. Head and neck stretched out. Still immobile after 22 hours. Ran off 10 minutes after 56 mgm Venocortin i.m.
4.	♂	35 Est.	25	5 after 30 min.	20 min. 90 min.	1.4	110	135	Animal struggled for almost 2 hours. Weak and stiff, slight inco-ordination on release.
5.	♂	38 Est.	25	5 after 30 min.	20 after 90 min.	1.3	110	135	Reaction similar to 4 above. Somewhat stiff on release, but ran normally.
6.	♂	20 Est.	25	—	—	1.25	20	30	Animal struggled somewhat and never completely tranquilized. Released 5½ hours after capture. Inco-ordination of fore-limbs.
7.	♂	20 Est.	30	5 after 30 min.	—	1.0	20	40	Tranquil but alert.
8.	♂	35 Est.	20	—	—	1.0	8	17	Marked sedation. Respiration slightly laboured. Bloat. Recovered completely after 8 hours.
9.	♂	34	30	—	—	0.9	10	20	Marked sedation. Respiration laboured.
10.	♀	39	35	—	—	0.9	8	20	Marked sedation. Respiration slow. Head flexed.
11.	♀	35	30	—	—	0.9	8	18	Marked sedation. Respiration normal.

13.	♀	40	—	—	—	0.8	10	20	Tranquil; head erect, Respiration normal.
14.	♂	25	—	—	—	0.8	11	25	Tranquil; head erect, Respiration normal.
15.	♀	40	—	—	—	0.8	12	23	Tranquil; head erect, Respiration normal.
16.	♀	30	—	—	—	0.8	10	20	Tranquil; head erect, Respiration normal.
17.	♀	25	—	—	—	0.8	10	20	Tranquil; head erect, Respiration normal.
18.	♂	35	—	—	—	0.7	10	15	Tranquil; head erect, Respiration normal. Released after 5½ hours.
19.	♀	35	—	—	—	0.7	15	20	Tranquil; head erect, Respiration normal, Released 6¼ hours after initial dose.
20.	♀	35	—	—	—	0.7	10	20	Animal struggled slightly when disturbed and only tranquilized after 120 min. Released 14 hours after capture. Ran normally.
21.	♀	35	—	—	—	0.7	10	20	Tranquil. Head erect. Respiration normal. Released 5 hours after capture.
22.	♀	35	—	—	—	0.7	10	20	Tranquil. Head erect. Respiration normal. Released 5 hours after capture.
23.	♀	35	—	—	—	0.7	10	20	Neck injured during capture. Effect of tranquilizer expired after 5½ hours.
24.	♂	25	—	—	—	0.7	15	25	Tranquil. Head erect. Respiration normal. Released after 5½ hours. Ran normally.
25.	♂	35	—	—	—	0.7	15	25	Tranquil but alert. Respiration normal.
26.	♀	35	—	—	—	0.7	10	15	Tranquil but alert. Respiration normal.
27.	♂	30	—	—	—	0.66	10	20	Marked sedation. Still weak and prostrate after 5½ hours. Recovered soon after Venocortin i.m.
28.	♂	30	—	—	—	0.6	10	15	Mild sedation. Head erect. Released after 14 hours. Ran normally.
29.	♂	38 Actual	—	—	—	0.6	10	20	Tranquil. Head erect. Released after 14 hours. Ran normally.

METHOD OF CAPTURE

For several reasons the capture of these small ungulates could not be accomplished by means of the drug technique. Capture by means of a net was thought to be the most suitable of various mechanical methods considered.

A seven inch mesh flaxen net specially made for this purpose, consisted of ten sections — each 50 yards long and 8 feet wide.

Five sections of the net (covering a distance of 250 yards) were strategically suspended by means of bamboo spars in such a way that the slightest impact would cause the net to drop down upon the animal. The remaining five sections were suspended in a similar way (on the same spars) to cater for animals running from the opposite direction. About half the width of the net was spread out on the ground, thus leaving a suspended portion of about 4 feet high. After erecting this net barrier the *modus operandi* was as follows:

Five or six assistants took shelter in the long grass 5-10 yards behind the net. The rest of the party went out on horseback and on foot, scouting in the vicinity for the animals in the long grass veld or sheltered places where they lie up during day time. As soon as one or more animals were flushed the horsemen took over and stampeded the animals towards the net. With the net well camouflaged in the long grass during winter time, the animals were unaware of the ambush. With the suspended part of the net lightly tied onto the spars (by means of thin cotton thread) and the rest of the net lying on the ground, the animals got entangled the moment the net dropped down. At this moment the animals were seized by those lying in wait behind the net.

Immediately after capture each animal was blindfolded, its legs tied with nylon stockings and a tranquillizer injected. Each animal received an additional injection of Penicillin and Prednisolone to counteract secondary infection and shock. In the case of male animals short lengths of rubber tubing were fitted over the horns to prevent injury to those handling them.

THE TRANQUILIZATION AND TRANSPORTATION OF THE CAPTURED ANIMALS

An experimental drug R05-2807/B-5F (Roche) was used as the tranquillizing agent for the translocation of the captured wild ungulates. These animals were transported by means of a ton and a half truck, equipped with a canopy. Ordinary hay was used as bedding.

DISCUSSION

During our field trials in the translocation of wild ungulates, variable results were obtained with R05-2807/B-5F as a tranquillizing agent. The majority of captured animals responded very well to this drug and we were particularly impressed with the rapid onset of the tranquillizing effect in these animals.

TABLE II
 R05-2807/B-5F (Roche) as a tranquilizer in captured Steenbuck (*Raphicerus campestris zuluensis* Roberts)

No.	Sex	Weight in lbs.	Initial dose mgm	Additional mgm after initial dose	Additional mgm after initial dose	Total dose mgm/lb.	Reaction commenced (minutes)	Tranquilized after (minutes)	REMARKS
1.	♂	25 Est.	15	—	—	0.6	—	—	The animal kept struggling and was never satisfactorily tranquilized.
2.	♀	20 Est.	12.5	—	—	0.6	—	?	Animal not completely tranquilized and struggled somewhat.
3.	♂	25 Est.	12.5	10 after 15 min.	—	0.9	30	65	Initial dose too low but was satisfactorily tranquilized after additional dose.
4.	♂	25 Est.	15	10 after 15 min.	—	1.0	—	—	Animal struggled violently. Never completely tranquilized. Weak and stiff after 5 hours. Prostrate after 7 hours. Recovered and released after 17 hours.
5.	♀	25 Est.	35	—	—	1.4	10	15	Tranquil. Respiration normal. Ran normally on release.
6.	♀	25 Est.	35	—	—	1.4	10	15	Still immobile after 5 hours. Released fully recovered after 17 hours.

TABLE III
R05-2807/B-5F (Roche) as a tranquilizer in captured Grey rhebuck (*Pelea capreolus* Bechstein)

No.	Sex	Weight in lbs.	Initial dose mgm	Additional mgm after initial dose	Additional mgm after initial dose	Total dose mgm/lb.	Reaction commenced (minutes)	Tranquilized after (minutes)	REMARKS
1.	♂	50 Est.	50	15 after 30 min.	—	1.3	30	40	Tranquil. Respiration normal. Ran normally on release 7 hours later.
2.	♂	50 Est.	50	—	—	1.0	8	10	Tranquil. Respiration normal. Ran normally on release 7 hours later.
3.	♂	60 Est.	62½	—	—	1.1	10	15	Tranquil. Respiration normal. Ran normally on release 7 hours later.
4.	♀	70 Est.	75	—	—	1.1	15	30	Never fully tranquilized. Probably underestimated weight.
5.	♂	70 Est.	75	—	—	1.1	10	15	Tranquil. Respiration normal. Ran normally on release.
6.	♀	75 Est.	75	—	—	1.0	20	30	Marked sedation. Animal very tired and hot when caught. Recovered after 8 hours.
7.	♀	40 Est.	30	—	—	0.75	10	15	Animal very tired when caught. Good reaction. Recovered within 5 hours.
8.	♀	30 Est.	25	—	—	0.83	10	15	Animal very tired when caught. Good reaction. Recovered within 5 hours.

In the majority of cases where tranquillization was not effected and the dose had to be replenished to produce the requisite calmness for transportation, the animals were moved to the truck immediately after drug administration. Consequently it was most essential for the captive animal to be blindfolded immediately and to be held in the arms of an assistant for a period of 10-15 minutes.

These precautions had to be taken to ensure optimum conditions prior to the drug taking effect. If these precautions are not adhered to, the animal never ceases struggling and in our experience requires much larger doses of the drug before obtaining the required state of tranquillization.

The most desirable state of tranquillization was obtained at a dosage rate of 0.6-0.8 mgm/lb. in oribi and 1.1-1.4 mgm/lb. in steenbuck and grey rhebuck.

In some instances R05-2807/B-5f produced a rather marked depression of the animal at a relatively low dosage rate. This could be ascribed to the fact that these animals were exhausted (and some injured) at the time of drug administration after capture.

All the animals were kept blindfolded and their legs lightly tied with nylon stockings during transit. Some animals experienced difficulty in using their legs on release, which was probably due to excessive lactic acid accumulation and muscle fatigue contracted during the capture operation. The effect of R05-2807/B-5F lasted for a period of 5-8 hours.

Although the capture and transportation of the oribi could be classed as a success, their subsequent adaptation to the foreign surroundings in the Faai camp at Pretoriuskop was less satisfactory. Over a period of 3 months more than 50% of the animals succumbed as a result of various complications arising. Predators (leopard and jackal) were amongst others responsible for deaths. Most of the females were pregnant at the time of capture and it is in our opinion undesirable to capture these animals during late winter and spring.

RESUMÉ

A brief description is presented of the method applied for the capture of forty-three wild ungulates, by means of a flaxen net, in the Eastern Transvaal. These animals included three different species viz. oribi (*Ourebia ourebi* Zimmerman), steenbuck (*Raphicerus campestris zuluensis* Roberts) and grey rhebuck (*Pelea capreolus* Bechstein) and were translocated to the Kruger National Park and Badplaas.

The experimental drug R05-2807/B-5f (Roche) used as a tranquillizer during transportation of these animals receives specific mention.

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Particular thanks are also due to the Department of Fauna and Flora of the Transvaal Provincial Administration for sanctioning the capture of these protected animals, and for supplying the necessary permits for their translocation to the Kruger National Park. Messrs. Visagie and Alberts of this Department offered valuable assistance during the preliminary operations.

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FIG. 1.

Top: Erection of net before drive. Photo: The Star, Johannesburg.

FIG. 2.

*Below: Blindfolded oribi ram immediately after capture on the farm "Ida".
Photo: The Star, Johannesburg.*



FIG. 3.

Blindfolded oribi ram in tranquillized state in back of closed vehicle. Note rubber tubing on horns and plastic ear tag. Photo : The Star, Johannesburg.

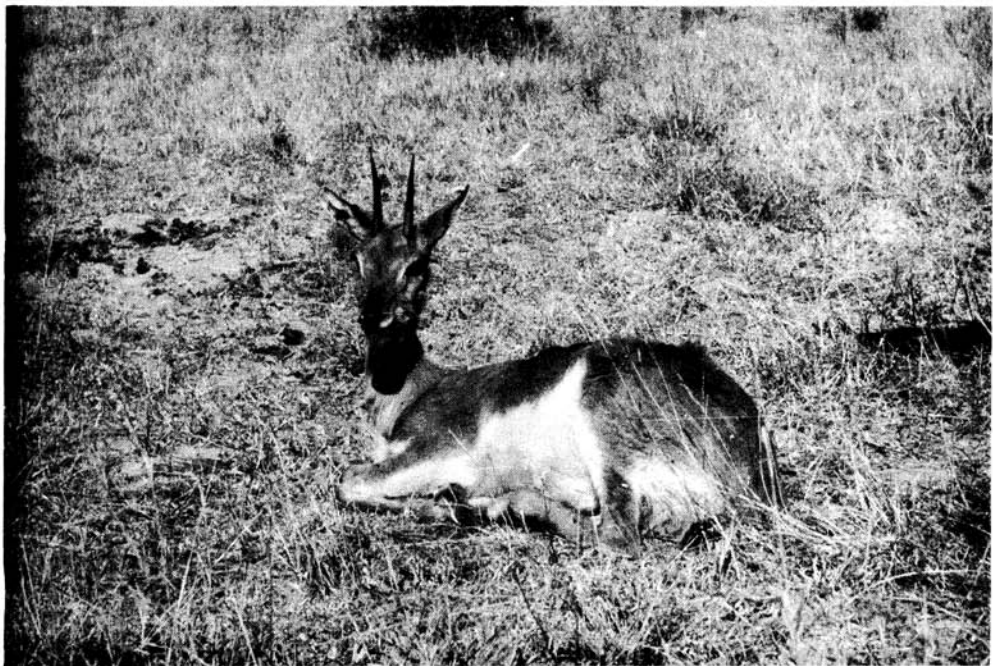


FIG. 4.

Top : Group of oribi, grey rhebuck and steenbok after capture on Umpiluzi Forest Reserve.

FIG. 5.

Below : Oribi ram after release in Faai camp near Pretoriuskop, K.N.P.